

Hepatitis B Quicksheet



Clinical Symptoms

Hepatitis B virus (HBV) infection may be asymptomatic or patients may present with subacute illness (anorexia, nausea, malaise), clinical hepatitis with jaundice, or fulminant hepatitis. Development of clinical symptoms is highly age-dependent with asymptomatic infection most common in young children.

Age at time of infection is the primary determinant of the risk of progression to chronic infection; 90% of perinatally infected infants develop chronic HBV infection, whereas 5% to 10% of acutely infected older children and adults progress to chronic infection.

Mode of Transmission

HBV may be transmitted by parenteral or mucosal exposure to the body fluids, particularly blood and serous fluids, of an infected person.

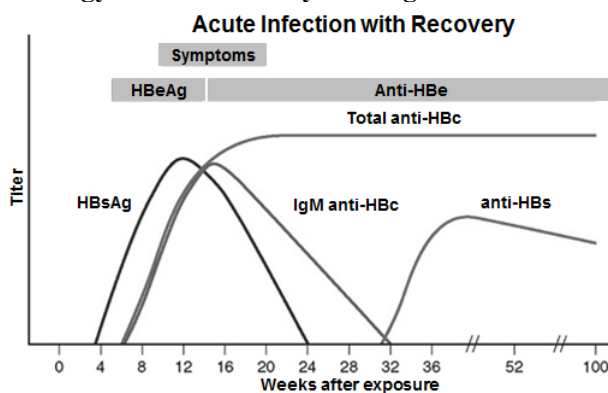
Incubation Period

45 to 160 days (average, 90 days).

Period of Communicability

An individual infected with HBV should be considered infectious any time hepatitis B surface antigen (HBsAg) is present in the blood. HBsAg can be found in the blood and body fluids of infected persons 1 to 2 months before and any time after the onset of symptoms.

Serology and Laboratory Testing



Anti-HBs positive test results indicate immunity to HBV due to immunization or recovery from prior infection.

HBsAg, HBV DNA, and HBeAg positive test results indicate HBV infection. During recovery, these markers become undetectable. Persistence of these markers over 6 months indicates progression to chronic infection. Presence of HBeAg and high levels of HBV DNA indicate increased infectivity.

IgM Anti-HBc positive test results generally indicate acute HBV infection, but can occur during exacerbations of chronic infection.

Acute Hepatitis B Case Definition

Confirmed: An acute illness with discrete onset of any sign or symptom consistent with viral hepatitis (e.g., fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, abdominal pain),* and:

- Either jaundice **OR** ALT levels > 100 IU/L **AND**
- HBsAg positive **AND**
- IgM anti-HBc positive (if done)

*A documented negative HBsAg laboratory test result <6 months prior to a positive HBsAg, HBeAg or HBV DNA result does not require an acute clinical presentation to meet the surveillance case definition.

Chronic Hepatitis B Case Definition

Confirmed: No symptoms are required.

- IgM anti-HBc negative **AND**
- HBsAg **OR** HBeAg **OR** HBV DNA positive; **OR** HBsAg, HBeAg or HBV DNA positive test results two times at least 6 months apart. Any combination of these tests performed at least 6 months apart is acceptable.

Probable: A person with a single HBsAg, HBeAg or HBV DNA positive lab result who does not meet the case definition for acute HBV infection.

Comment

Multiple laboratory tests indicative of chronic HBV infection may be performed simultaneously on the same patient specimen as part of a "hepatitis panel." Testing performed in this manner may lead to seemingly discordant results, e.g., a patient may be HBsAg-negative **and** HBV DNA-positive. For the purposes of the chronic Hepatitis B case definition, a positive HBsAg, HBeAg or HBV DNA result is acceptable evidence of infection, regardless of other testing results. Negative HBeAg results and HBV DNA levels below positive cutoff level do not confirm the absence of HBV infection.

Perinatal Hepatitis B Case Definition

Confirmed: HBsAg positivity in an infant aged 1 to 24 months born in the U.S. or U.S. territories to an HBsAg-positive mother.

Recommended Pre-exposure Vaccination

The HBV vaccine series is recommended for all children beginning at birth and for all adults seeking protection from HBV infection.

In settings where a high proportion of adults are likely to have risk factors for HBV infection (facilities for STI or HIV testing and treatment, correctional facilities, drug treatment facilities, dialysis centers, etc.), all unimmunized adults should receive the HBV vaccine series. The HBV vaccine series is also recommended for diabetic adults 19-59 years of age. Booster doses of HBV vaccine are not recommended for adults and children with normal immune status.

Routine HBV vaccination is recommended for all healthcare and public safety workers at risk for exposure to blood or other potentially infectious body fluids. OSHA standards require that all employers offer the 3-dose vaccine series free to all employees who may be exposed to blood and other potentially infectious materials as a part of their job duties.

Recommended Postexposure Prophylaxis

Infants <12 months of age who have close contact with an HBV-infected primary caregiver and have received only one dose of vaccine should be administered the second dose of vaccine if the interval is appropriate, or HBIG if immunization is not due. Infants who have not previously received any vaccine doses should receive HBIG (0.5 mL) and start the vaccine series. Other susceptible household contacts without discrete, identifiable exposure should receive the vaccine series to protect against future exposures. Management of people with a discrete, identifiable percutaneous or mucosal exposure to blood or other potentially infectious materials (e.g., needlestick, laceration, bite, sexual exposure, shared razor or toothbrush, etc.) includes consideration of the HBsAg status of the source of the exposure and the HBV immunization and response status of the exposed person. See table below for details.

If the source is HBsAg-positive, unimmunized or partially immunized people should receive HBIG and HBV vaccine as soon as possible after exposure, preferably <24 hours. The effectiveness of HBIG diminishes the longer after exposure it is initiated and is unlikely to be effective >7 days.

Guidelines for the management of healthcare personnel and other people exposed to blood that is or might be HBsAg positive are provided in the table below.

Perinatal exposure

All infants born to HBsAg-positive mothers, regardless of birth weight, should receive a single dose of single-antigen HBV vaccine and HBIG (0.5 mL) within 12 hours of birth and complete the vaccine series. For infants weighing ≤ 2000 grams at birth, the birth dose of HBV vaccine should not be counted towards completion of the vaccine series. All infants should also receive postvaccination serologic testing for HBsAg and anti-HBs 1-2 months after completion of the vaccine series but no earlier than 9 months of age. If anti-HBs is inadequate, the vaccine series should be repeated and the infant retested for immunity 1-2 months later. Persons who don't respond after being revaccinated with a second series are unlikely to respond to additional doses of vaccine.

Investigation and Reporting Guidelines

Acute Hepatitis B: All cases of acute HBV should be investigated using the CDPH "Acute Hepatitis B/C Case Report Form." Priority should be given to identifying possible healthcare-associated infections. See "Acute HBV/HCV Public Health Investigation Quicksheet" at: <http://www.cdph.ca.gov/HealthInfo/discond/Documents/AcuteHepatitisBCQuicksheet.pdf>

Chronic Hepatitis B: Due to the high volume of HBsAg-positive reports, many local health jurisdictions are unable to investigate all chronic HBV cases. Priority should be given to identifying and reporting HBsAg-positive pregnant women to the Perinatal Hepatitis Prevention Program.

Perinatal Hepatitis B: In addition to the CMR, perinatal HBV cases should also be reported to the Immunization Branch using the CDPH "Perinatal Hepatitis B Case Report Form." All CDPH case report forms are available at: <http://www.cdph.ca.gov/pubsforms/forms/Pages/CD-Report-Forms.aspx>

Recommendations for HBV Prophylaxis After Percutaneous or Mucosal Exposure to Blood or Body Fluids¹

Exposed Person	Treatment when source is:		
	HBsAg Positive	HBsAg Negative	Unknown or Not Tested
Unimmunized	Administer HBIG ² (1dose) and initiate HBV vaccine series	Initiate HBV vaccine series	Initiate HBV vaccine series
Previously Immunized			
Known Responder	No treatment	No treatment	No treatment
Known Nonresponder	HBIG (1 dose) and initiate reimmunization ³ or HBIG (2 doses)	No treatment	If known high-risk source, treat as if source were HBsAg positive
Response Unknown	Test exposed person for anti-HBs ⁴ • If inadequate, HBIG (1 dose) and vaccine booster dose ⁵ • If adequate, no treatment	No treatment	Test exposed person for anti-HBs ⁴ • If inadequate, vaccine booster dose ⁵ • If adequate, no treatment

¹CDC. Immunization of Health-Care Personnel: Recommendations of the ACIP. MMWR Recomm Rep. 2011;60(RR-7):1-45. <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6007a1.htm>

²Dose of HBIG, 0.06 mL/kg, intramuscularly.

³Administering 1 dose of HBIG (0.06 mL/kg IM) and reinitiating the vaccine series is preferred for nonresponders who have not completed a second 3-dose vaccine series. For people who completed a second vaccine series but failed to respond, 2 doses of HBIG are preferred, 1 dose as soon as possible after exposure, the second 1 month later.

⁴Adequate anti-HBs is ≥ 10 mIU/mL.

⁵The antibody response should be evaluated after the vaccine booster dose. For people who receive HBIG, anti-HBs testing should be performed when passively acquired antibody from HBIG is no longer is detectable (e.g., 4-6 months); for people who did not receive HBIG, anti-HBs testing should be performed 1-2 months after the vaccine booster dose. If anti-HBs is inadequate after the vaccine booster dose, 2 additional doses should be administered to complete a 3-dose reimmunization series.